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EXAMINER	
GRIMM, S	
ART UNIT	PAPER NUMBER
252	11

DATE MAILED: 03/24/81

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined. ☒ Responsive to communication filed on Dec. 18, 1980 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire THREE month(s), _____ ~~days~~ from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☐ Notice of Informal Patent Drawing, PTO-948
3. ☐ Notice of References Cited by Applicant, PTO-1449
4. ☐ Notice of Informal Patent Application, Form PTO-152
5. ☐ _____

Part II SUMMARY OF ACTION

1. ☒ Claims 1-3, 5-23, 25-41, and 44-48 are pending in the application.
   Of the above, claims 11-14 and 36 are withdrawn from consideration.
2. ☒ Claims 4, 24, 42 and 43 have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-3, 5-10, 15-23, 25-35, 37-41 and 44-48 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ The formal drawings filed on _____ are acceptable.
8. ☒ The drawing correction request filed on Dec. 18, 1980 has been ☒ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has
   ☐ been received. ☐ not been received. ☐ been filed in parent application, serial no. _____,
   filed on _____.
10. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
11. ☐ Other

PTOL-326 (rev. 7-79)

EXAMINER'S ACTION

1. Claims 7 and 44 are rejected under 35 USC 112, second paragraph, as being indefinite as follows:

a) In claim 7, line 6, it is not clear that the output winding is the same as the one claimed in claim 1, line 13.

b) In claim 44, line 3, "transducers" does not make sense and should apparently be --transistor--.

2. Claims 1-3, 5, 6, 8-10, 15-23, 25-35, and 45-48 are again rejected under 35 USC 102 or 35 USC 103 as being clearly anticipated or rendered obvious by Hesler et al (4,002,999) of record. Hesler et al ('99) in Figs. 1 and 2, for example, show a self-oscillating inverter circuit substantially as claimed. Windings 14 and 16 are, respectively, the primary and secondary of a saturable current transformer for providing regenerative feedback to the base of transistor 20. Winding 18 is the secondary of a non-saturable current transformer which has winding 12 as its primary. When the current transformer associated with windings 14 and 16 saturates, winding 18 provides degenerative feedback to the base of transistor 20 in response to current flow through primary winding 12. (See column 9, lines 58-68). From Figs. 1 and 2 it is obvious that windings 12 and 18 form a current transformer since winding 12 is in series with transistor 20. The dictionary definition of a current transformer is "a transformer having its primary winding connected in series with a circuit carrying the current to be measured or controlled."

With respect to claims 5, 35, 45, 47 and 48, it is considered obvious that the current transformers and the output transformer of Hesler et al Fig. 1 can be formed on separate cores if desired. It is known in the art to use separate cores for different transformers in inverter circuits. While Hesler et al ('99) show that it is possible to combine all transformers on a single core, it would be quite apparent, to a person skilled in the art, that the transformers may be formed on separate cores as is usually done in circuits of this type.

With respect to claims 9 and 17, the capacitor 34 in Fig. 1 of Hesler et al ('99) performs the same function as claimed. See column 5, lines 9-13.

With respect to claim 15, Fig. 1A shows in curves VCE_1 and VG_1 that Hesler et al ('99) also have reverse bias on the base-emitter junction when the collector-emitter voltage is greater than the collector-emitter saturation voltage.

With respect to claim 16, it should be noted that the apertures and junctions of the two C-sections of the transformer core in Fig. 2 of Hesler et al ('99) also provide shunt leakage inductance, and large collector voltage swings are indicated in Fig. 1A by curve VCE_1.

The four distinct periods in the emitter-collector voltage waveform of claim 22 and the operation claimed in claims 23, 25 and other claims are also shown in Fig. 1A of Hesler et al ('99).

With respect to claims 33 and 34, diodes 22, 23 in Fig. 1 of Hesler et al ('99) correspond in polarity and connection to applicant's diodes 22, 23.

3. Claims 1-3, 5-10, 15-21, 35, 37-41 and 44-48 are also again rejected under 35 USC 102 or 35 USC 103 as being clearly anticipated or rendered obvious by Hesler et al (3,914,680) of record. The entire patent is relied upon, but Figs. 5 and 6 are particularly pertinent. It should be noted that the circuits in Hesler et al ('80) are very similar to the circuits in Hesler et al ('99), and, thus, the explanations and reasons for obviousness made above in paragraph 2 are repeated for this rejection insofar as they are pertinent.

In addition, with respect to claims 7 and 37, particular reference is made to Figs. 4 and 5 of Hesler et al ('80). In Fig. 5 winding 15 corresponds to the claimed output winding of the second current transformer. It would be considered obvious that winding 15 could be formed with a grounded center tap like winding 47 in Fig. 5, and diodes 25 and 26 would then be connected in series with winding 15 and resistors 42 and 44 like diodes 29 and 30. It should be noted that Fig. 4 shows an embodiment in which winding 28 without center tap is used, and Fig. 5 shows how this winding has been modified as center tapped winding 47. Thus, it is considered obvious that winding 15 can be made center tapped in a similar manner.

With respect to claims 2, 6 and other claims which claim a low resistance path for connecting the output windings between the bases of the two transistors of the inverter, it should be noted that resistors 41-44 in Figs. 5 and 6 are of very low values, such as 2 ohms (column 11, line 40). A low resistance path is, therefore, also provided in Figs. 5 and 6 of Hesler et al ('80).

4. This action is made FINAL.

Siegfried H. Grimm

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EXAMINER
GROUP ART UNIT 252

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3-23-81